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APPLICATION INFORMATION

Title Line One:: SPEECH PROCESSING  
Total Drawing Sheets:: ONE  
Formal Drawings?: Yes  
Application Type:: UTILITY  
Docket Number:: WN/LM/DRA.3.PCT/US

REPRESENTATIVE INFORMATION

Representative Customer Number:: 000466

CONTINUITY INFORMATION

This application is a:: 371 OF  
>Application One:: PCT/GB99/03322  
Filing Date:: OCTOBER 15, 1999

PRIOR FOREIGN APPLICATION

Foreign Application One:: 9822529.5  
Filing Date:: OCTOBER 16, 1998  
Country:: UNITED KINGDOM  
Priority Claimed:: Yes

FORM PTO-1390

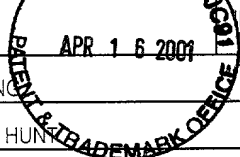
U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE  
TRANSMITTAL LETTER TO THE UNITED STATES  
DESIGNATED/ELECTED OFFICE (DO/EO/US)  
CONCERNING A FILING UNDER 35 U.S.C. 371

ATTORNEY'S DOCKET NUMBER  
WN/LM/DRA.3.PCT/US

U.S. APPLICATION NO. (if known, see 37 CFR 1.51)

09/807628

INTERNATIONAL APPLICATION NO.:  
PCT/GB99/03322



INTERNATIONAL FILING DATE:  
5 October 1999 (15.10.99)

PRIORITY DATE CLAIMED:  
16 October 1998 (16.10.98)

TITLE OF INVENTION: SPEECH PROCESSING

APPLICANT(S) FOR DO/EO/US: Melvyn John HUN

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information.

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).
4. ☒ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
  - a. ☒ is transmitted herewith (required only if not transmitted by the International Bureau).
  - b. ☒ has been transmitted by the International Bureau. (see attached copy of PCT/IB/308)
  - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☐ A translation of the International Application into English (35 U.S.C. 371(c)(2)).
7. ☐ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)).
  - a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau)
  - b. ☐ have been transmitted by the International Bureau.
  - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
  - d. ☐ have not been made and will not be made.
8. ☐ A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☒ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4))
10. ☐ A translation of the annexes of the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Item 11. to 16. below concern document(s) or information included:

11. ☒ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☒ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☒ A **FIRST** preliminary amendment.
14. ☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
14. ☐ A substitute specification.
15. ☐ A change of power of attorney and/or address letter.
16. ☒ Other items or information: International Preliminary Examination Report (PCT/IPEA/409), International Search Report (PCT/ISA/210), Application Data Sheet

U.S. APPLICATION NO. <b>09/807628</b>		INTERNATIONAL APPLICATION NO PCT/GB99/03322		ATTORNEY'S DOCKET NO. WN/LM/DRA.3.PCT/US																																																																											
17. <input checked="" type="checkbox"/> The following fees are submitted:  <b>BASIC NATIONAL FEE (37 CFR 1.492(a)(1)-(5)):</b> Neither international preliminary examination fee (37 CFR1.482) nor international search fee (37 CFR1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO ..... \$ 1,000.00  International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO ..... \$ 860.00  International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO ..... \$ 710.00  International preliminary examination fee (37 CFR 1.482) paid to USPTO but all claims did not satisfy provisions of PCT Article 33(1)-(4) ..... \$ 690.00  International preliminary examination fee (37 CFR 1.482) paid to USPTO and all claims satisfied provisions of PCT Article 33(1)-(4) .. \$ 100.00  <div style="text-align: right;"><b>ENTER APPROPRIATE BASIC FEE AMOUNT =</b></div>				CALCULATIONS PTO USE ONLY																																																																											
Surcharge of \$130.00 for furnishing the oath or declaration later than months from the earliest claimed priority date (37 CFR 1.492(e)).				\$ 860.00																																																																											
<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:15%;">CLAIMS</th> <th style="width:15%;">NUMBER FILED</th> <th style="width:15%;">NUMBER EXTRA</th> <th style="width:15%;">RATE</th> <th style="width:10%;">\$</th> <th style="width:30%;"></th> </tr> </thead> <tbody> <tr> <td>Total claims</td> <td>14 - 20 =</td> <td>0</td> <td>X \$18.00</td> <td>\$</td> <td></td> </tr> <tr> <td>Independent claims</td> <td>4 - 3 =</td> <td>1</td> <td>X \$80.00</td> <td>\$</td> <td>80.00</td> </tr> <tr> <td colspan="3">MULTIPLE DEPENDENT CLAIMS(S) (if applicable)</td> <td>+ \$270.00</td> <td>\$</td> <td></td> </tr> <tr> <td colspan="4" style="text-align: right;"><b>TOTAL OF ABOVE CALCULATIONS =</b></td> <td>\$</td> <td>940.00</td> </tr> <tr> <td colspan="4" style="vertical-align: top;">           Reduction of 1/2 for filing by small entity, if applicable. Applicant claims Small Entity Status under 37 CFR 1.27         </td> <td>\$</td> <td></td> </tr> <tr> <td colspan="4" style="text-align: right;"><b>SUBTOTAL =</b></td> <td>\$</td> <td>940.00</td> </tr> <tr> <td colspan="4" style="vertical-align: top;">           Processing fee of \$130 for furnishing the English translation later than months from the earliest claimed priority date (37 CFR1.49(f)).         </td> <td>\$</td> <td></td> </tr> <tr> <td colspan="4" style="text-align: right;"><b>TOTAL NATIONAL FEE =</b></td> <td>\$</td> <td>940.00</td> </tr> <tr> <td colspan="4" style="vertical-align: top;">           Fee for recording the enclosed assignment (37 CFR1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3 28, 3.31). \$40 00 per property         </td> <td>\$</td> <td>40 00</td> </tr> <tr> <td colspan="4" style="text-align: right;"><b>TOTAL FEES ENCLOSED =</b></td> <td>\$</td> <td>980.00</td> </tr> <tr> <td colspan="4" rowspan="2"></td> <td colspan="2" style="text-align: center;">Amount to be refunded:</td> </tr> <tr> <td colspan="2" style="text-align: center;">charged:</td> </tr> </tbody> </table>				CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE	\$		Total claims	14 - 20 =	0	X \$18.00	\$		Independent claims	4 - 3 =	1	X \$80.00	\$	80.00	MULTIPLE DEPENDENT CLAIMS(S) (if applicable)			+ \$270.00	\$		<b>TOTAL OF ABOVE CALCULATIONS =</b>				\$	940.00	Reduction of 1/2 for filing by small entity, if applicable. Applicant claims Small Entity Status under 37 CFR 1.27				\$		<b>SUBTOTAL =</b>				\$	940.00	Processing fee of \$130 for furnishing the English translation later than months from the earliest claimed priority date (37 CFR1.49(f)).				\$		<b>TOTAL NATIONAL FEE =</b>				\$	940.00	Fee for recording the enclosed assignment (37 CFR1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3 28, 3.31). \$40 00 per property				\$	40 00	<b>TOTAL FEES ENCLOSED =</b>				\$	980.00					Amount to be refunded:		charged:		a. <input checked="" type="checkbox"/> A check in the amount of \$ <b>980</b> to cover the above fees is enclosed.  b. <input type="checkbox"/> Please charge my Deposit Account No. <b>25-0120</b> in the amount of \$ to cover the above fees. A duplicate copy of this sheet is enclosed.  c. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required by 37 CFR 1.16 and 1.17, or credit any overpayment to Deposit Account No. <b>25-0120</b> . A duplicate copy of this sheet is enclosed.	
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SEND ALL CORRESPONDENCE TO  YOUNG & THOMPSON 745 South 23rd Street 2nd Floor Arlington, VA 22202 (703) 521-2297 facsimile (703) 685-0573 <b>Customer Number: 000466</b>																																																																															

By Benoît Castel  
 Benoît Castel  
 Attorney for Applicant  
 Registration No. 35,041

PATENTS

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Melvyn John HUNT

Box Non-fee Amendment

Serial No. (unknown)

GROUP

Filed herewith

Examiner

SPEECH PROCESSING

PRELIMINARY AMENDMENT

Commissioner for Patents

Washington, D.C. 20231

Sir:

Prior to the first Official Action and calculation of the filing fee, please amend the above-identified application as follows:

IN THE CLAIMS:

Please amend claim <sup>4</sup>3 as follows:

<sup>4</sup>3. (Amended) Apparatus according to Claim 3, which includes means operable to define, for each utterance, an utterance period comprising a first time period for measuring said acoustic noise level and a second time period during which said utterance is made.

09807628-041601

Melvyn John HUNT

Claim <sup>4</sup>3 was amended to correct multiple dependencies.

Attached hereto is a marked-up version of the changes made to the claim by the current amendment. The attached page is captioned "VERSION WITH MARKINGS TO SHOW CHANGES MADE".

Respectfully submitted,

YOUNG & THOMPSON

By *Benoît Castel*  
Benoît Castel  
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745 South 23rd Street  
Arlington, VA 22202  
703/521-2297

April 16, 2001

09807628 "041601

"VERSION WITH MARKINGS TO SHOW CHANGES MADE"

<sup>4</sup>  
~~3.~~ Apparatus according to ~~an preceding~~ Claim 3,  
which includes means operable to define, for each utterance,  
an utterance period comprising a first time period for  
measuring said acoustic noise level and a second time period  
during which said utterance is made.

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Speech Processing

This invention relates to apparatus and a method for estimating the speech level of a speaker exposed to an environment containing a variable amount of acoustic noise.

5 In particular, but not exclusively, the invention relates to such apparatus and methods for use in speech recognition.

The central process in automatic speech recognition is the comparison between some representation of the speech to  
10 be recognised and a set of reference models corresponding to speech sounds or words or other units. It is important that the level of the speech signal represented in the recogniser should be close to that expected by the models.

Because speech sounds vary in their intrinsic loudness,  
15 measuring overall speech level is not a trivial process. It is necessary either to take a large enough sample of the speech that the variations occurring between speech sounds average out, or to compare an utterance whose level is to be measured with an utterance at some known level whose  
20 phonetic content is the same. In this second method, phonetically identical speech sounds can be compared, but it does require a knowledge of the content of the utterance to be measured.

We have realised that it is in fact possible to  
25 estimate variations in the likely level of the speech signal in acoustically noisy environments by measuring the ambient noise level and using a phenomenon known as the Lombard

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